

Date: 03/11/2019

**Max. Marks: 100**

## SOLUTIONS

**Time allowed: 120 mins**

**101.** A small source of light casts a sharp shadow on an opaque object shows  
(1) Ray Nature of Light (2) Wave Nature of Light (3) Particle Nature of Light (4) Dual Nature of Light

**Ans. (1)**

**Sol.** Ray travels in straight line  
∴ Ray nature of light.

**102.** In Domestic Electric Circuits appliances are always connected in

- (1) Series (2) Parallel  
(3) Mixed (4) Bulbs in Series and Fans in Parallel

**Ans. (2)**

**Sol.** Connected in parallel, so that they get equal applied voltages, can be switched off or on separately.

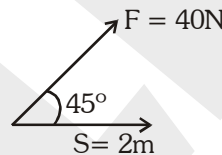
**103.** A force of 40 N acts on a body, and body moves through a distance of 2 metre at an angle of 45° In the direction of the force, The work done by the force is

- (1)  $40/\sqrt{2}J$  (2)  $20/\sqrt{2}J$  (3)  $80/\sqrt{2}J$  (4)  $40/\sqrt{2}J$

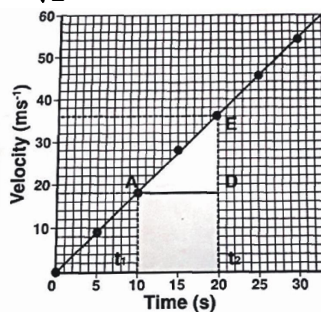
**Ans. (3)**

**Sol.**

$$\begin{aligned} W &= \vec{F} \cdot \vec{S} \\ &= FS \cos 45^\circ \\ &= (40)(2) \frac{1}{\sqrt{2}} \\ &= \frac{80}{\sqrt{2}} J \end{aligned}$$



**104.**



In the above graph what is the value of Acceleration?

- (1)  $360 \text{ ms}^{-2}$  (2)  $180 \text{ ms}^{-2}$  (3)  $0.9 \text{ ms}^{-2}$  (4)  $1.8 \text{ ms}^{-2}$

**Ans. (4)**

**Sol.** Acceleration is slope of v-t graph

$$\therefore \frac{ED}{AD} = \frac{36 - 18}{10} = 1.8 \text{ m/sec}^2$$

**105.** A Person cannot see the object beyond 50 an, The power of lens to correct this defect will be  
 (1) +2D (2) -2D (3) +5D (4) 0.5 D

**Ans. (2)**

**Sol.** Defect is myopia  
 $\therefore P = -1/\text{far point}$

$$= -\frac{1}{\frac{50}{100}} = -2D$$

**106.** If the frequency of wave is trippled , then its wave length?

- (1) Becomes Double (2) Becomes Half  
 (3) Becomes One third of original (4) Remains same.

**Ans. (3)**

**Sol.** As  $v = f.\lambda$

As velocity is constant, for frequency being trippled, wavelength has to get reduced by 1/3.

**107.** A positively charged particle (alpha particle) projected towards west is deflected towards north by magnetic feild. The direction of magnetic field is

- (1) Downwards (2) Towards South (3) Towards East (4) Upwards

**Ans. (4)**

**Sol.** Applying Fleming's left hand rule, magnetic field will be upwards.

**108.** If distance between Earth and Moon is increased by Six time, then force of grativation between both will -----

- (1) Increased 1/36 times (2) Decrease 1/36 times (3) Increase 36 times (4) Decrease 6 limes

**Ans. (2)**

**Sol.**  $F = \frac{GMm}{r^2}$

if  $r_1 = 6r$  , then  $F_1 = \frac{GMm}{(6r)^2}$

$$F_1 = \frac{1}{36} F$$

**109.** A bullet of mass 20g is horizontally fired with velocity of  $150 \text{ ms}^{-1}$  from pistol of mass 2 kg. What is the recoil velocity of the Pistol.

- (1)  $-1.5 \text{ ms}^{-1}$  (2)  $+1.5 \text{ ms}^{-1}$  (3)  $-3.0 \text{ ms}^{-1}$  (4)  $0 \text{ mv} >$

**Ans. (1)**

**Sol.** According to law to conservation of Momentum,

$$\left(\frac{200}{1000}\right)(150) + (2)V_p = 0 \Rightarrow V_p = -1.5 \text{ m/sec}$$

**110.** A object is placed 5 cm in front of Convex mirror, whose radius of curvature is 3cm. Find the Position and Nature of Image.

- (1) +1.15 cm. Real and Erect. (2) +1.15 cm, Virtual and inverted . \_  
 (3) +1.15 cm, Virtual and Erect (4) -1.15 cm, Virtual and Erect.

**Ans. (3)**

**Sol.**  $F = R/2 = 3/2 \text{ cm}$

$$\therefore \frac{1}{f} = \frac{1}{v} + \frac{1}{u} \Rightarrow \frac{2}{3} = \frac{1}{v} - \frac{1}{5}$$

$\Rightarrow V = + 1.15 \text{ cm}$ ; Image is always virtual and Erect in convex mirror.

**111.** A current of 0.5 A is drawn by a filament of an electric bulb for 10 minutes. Find the no of electrons flows through the circuit are

- (1)  $6 \times 10^{18}$  Electrons      (2)  $18 \times 10^{18}$  Electrons      (3)  $6 \times 10^{20}$  Electrons      (4)  $18 \times 10^{20}$  Electrons

**Ans. (4)**

**Sol.** As  $Q = It = (0.5)(10)(60) \Rightarrow 300C$

$$\text{As } Q = ne \Rightarrow n = Q/e = \frac{300}{1.6 \times 10^{-19}}$$
$$n = 18 \times 10^{20}$$

**112.** Which of following cannot hear ultrasound waves?

- (1) Bats      (2) Human      (3) Dolphins      (4) Dogs

**Ans. (2)**

**Sol.** Range for human is 20Hz–20,000Hz, Ultrasonic waves have frequency > 20,000 Hz.

**113.** Refractive Indexes (indices) of Water = 1.33, Kerosene = 1.44, Ruby = 1.71 & Diamond = 2.42 are respectively, in which of these velocity of high is minimum?

- (1) Water      (2) Kerosene      (3) Ruby      (4) Diamond

**Ans. (4)**

**Sol.** More the refractive index, less is the velocity

**114.** Among Mg,  $Mg^{2+}$ , Al,  $Al^{3+}$  which will have the largest and smallest size respectively ?

- (1)  $Mg^{2+}$ , Al      (2)  $Al^{3+}$ , Mg      (3) Mg,  $Al^{3+}$       (4) Al,  $Mg^{2+}$

**Ans. (3)**

**Sol.** Atomic size  $\propto \frac{1}{+ve \text{ charge}}$

Atomic size decrease along the period

So, largest size  $\rightarrow$  Mg and smallest size  $\rightarrow$   $Al^{3+}$

**115.** Which of the following statements about the modern periodic Table is/are incorrect

1. The elements in the Modern periodic table are arranged on the basis of their decreasing atomic number.
2. The elements in the Modern periodic table are arranged on the basis of increasing atomic masses.
3. Isotopes are arranged in adjoining or different groups in the Modern periodic table X
4. The elements in the Modern periodic table are arranged on the basis of their increasing atomic number.

- (1) 1 only      (2) 1, 2 and 3      (3) 1, 2 and 4      (4) 4 only

**Ans. (2)**

**Sol.** Factual

**116.** In Aluminothermite process aluminium is used as

- (1) Oxidising agent      (2) Ore      (3) Reducing agent      (4) Catalyst

**Ans. (3)**

**Sol.** Aluminium reduces metal oxides to metal. So, acts as reducing agent.

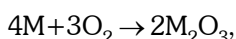
**117.** The greater number of water molecule will be in

- (1) 18 gm of water      (2) 18 moles of water      (3) 18 molecules of water      (4) 1.8 gram of water

**Ans. (2)**

**Sol.** 18 moles water =  $18 \times$  mass of 1 mole water  
 $= 18 \times 18\text{gm}$   
 $= 324 \text{ gm}$

**118.** Consider the following equation of chemical reaction of a metal M



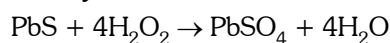
**The equation represents :-**

- (1) Combination reaction as well as oxidation reaction      (2) Combination reaction as well as reduction  
(3) Decomposition reaction as well as oxidation      (4) Oxidation reaction as well as displacement reaction

**Ans. (1)**

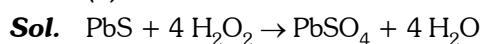
**Sol.** Metal is getting oxidised & a single product is formed. So, combination as well as oxidation reaction.

**119.** Identify the correct oxidant and reductant in the following reaction



- (1) PbS - Oxidant  
H<sub>2</sub>O<sub>2</sub> - Reductant  
(2) PbS - Reductant  
PbSO<sub>4</sub> - Oxidant  
(3) PbS - Reductant  
H<sub>2</sub>O<sub>2</sub> - Oxidant  
(4) H<sub>2</sub>O<sub>2</sub> - Oxidant  
H<sub>2</sub>O<sub>2</sub> - Reductant

**Ans. (3)**



PbS is oxidised to PbSO<sub>4</sub>, so reductant

H<sub>2</sub>O<sub>2</sub> is reduced to H<sub>2</sub>O, so oxidant

**120.** Silver articles become black on prolonged exposure to air. This is due to the formation of

- (1) Ag<sub>3</sub>N (2) Ag<sub>2</sub>O (3) Ag<sub>2</sub>S (4) Ag<sub>2</sub>S and Ag<sub>3</sub>N

**Ans. (3)**

**Sol.** Black layer is formed due to Ag<sub>2</sub>S

**121.** How many moles of NaOH are present in 160g of NaOH

- (1) 4 mole (2) 2 mole (3) 1 mole (4) 3 mole

**Ans. (1)**

**Sol.** 40 NaOH = 1 mol NaOH

$$160\text{g NaOH} = \frac{1}{40} \times 160 = 4 \text{ moles}$$

**122.** When a vegetative oil is treated with Hydrogen in the presence of Nickel catalyst it forms fat (Vegetable Ghee). This is an example of

- (1) Displacement reaction (2) Decomposition reaction (3) Addition reaction (4) Double displacement reaction

**Ans. (3)**

**Sol.** Vegetables oils  $\xrightarrow[\text{Ni}]{\text{H}_2}$  Fats

This is an addition reaction

**123.** This electronic configuration 2,8,6 represents element

- (1) Calcium (2) Sulphur (3) Oxygen (4) Magnesium

**Ans. (2)**

**Sol.** Factual

**124.** The Soap molecule has a

- (1) Hydrophobic head and Hydrophobic tail (2) Hydrophobic head and Hydrophilic tail  
(3) Hydrophilic head and Hydrophilic tail (4) Hydrophilic head and Hydrophobic tail

**Ans. (4)**

**Sol.** Soap molecule has hydrophilic head and hydrophobic tail

**125.** pH is defined as

- (1)  $-\text{Log} [\text{H}_3\text{O}^+]$  (2)  $-\text{Log} [\text{H}_2\text{O}]$  (3)  $+\text{Log} [\text{H}^+] [\text{OH}^-]$  (4)  $-\text{Log} [\text{H}^+] [\text{OH}^-]$

**Ans. (1)**

**Sol.**  $\text{pH} = \text{log} [\text{H}_3\text{O}^+]$

**126.** Which gas boils out first during fractional distillation of air?  
(1) Argon (2) Nitrogen (3) Oxygen (4) Carbon dioxide

**Ans. (2)**

**Sol.** Nitrogen, boiling point ( $-196^{\circ}\text{C}$ ) is obtained first followed by argon ( $-186^{\circ}$ ) and oxygen ( $-183^{\circ}\text{C}$ )

**127.** Which of the following is a plant hormone  
(1) Insulin (2) Thyroxin (3) Estrogen (4) Cytokine

**Ans. (4)**

**Sol.** Cytokine is a phytohormone, that promotes the cell division in plant shoot and root.

**128.** The shape of guard cells changes due to change in the  
(1) Protein composition of cells (2) Temperature of cells  
(3) Amount of water in cells (4) Position of nucleus in the cells

**Ans. (3)**

**Sol.** When the guard cells swell (turgid) due to the entry of water, the stomata open. But when the guard cells shrink (flaccid) due to the loss of water, the stomata gets closed.

**129.** Which of the following is a true statement  
(1) Ovary releases three eggs in every month (2) The eggs are produced in the uterus ^  
(3) If the egg is not fertilized, it lives for about one day (4) The fertilization takes place in the ovaries

**Ans. (3)**

**Sol.** The eggs are produced in ovary and each ovary release one egg every month alternately. Which release egg in fallopian tube for fertilization. If the egg is not fertilized, it lives for one day and then is removed during menstruation.

**130.** The tissues that helps in the movement of body are  
(1) Muscular tissues (2) Skeletal tissues (3) Connective tissues (4) Conducting tissues.

**Ans. (1)**

**Sol.** The muscular tissue help in the movement of body part because its attached to the bones which helps in movement.

**131.** Match the terms in column (A) with those in column (B)

Column A	Column B
(1) Trypsin	(a) Pancreas
(2) Amylase	(b) Liver
(3) Bile Juice	(c) Gastric glands
(4) Pepsin	(d) saliva

(1) (i) a (ii) d (iii) b (iv) c (2) (i) b (ii) c (iii) d (iv) a (3) (i) a (ii) b (iii) c (iv) (4) (i) b (ii) c (iii) a (iv) d

**Ans. (1)**

**Sol.** (A) (B)  
(1) Trypsin (a) Pancreas  
(2) Amylase (d) Saliva  
(3) Bile Juice (b) Liver  
(4) Pepsin (c) Gastric gland

**132.** Adenosine triphosphate (ATP) produces during \_\_\_\_\_ in living organisms and also during \_\_\_\_\_ in plants  
(1) Photosynthesis, Absorption (2) Respiration, Nutrition  
(3) Photosynthesis, Respiration (4) Respiration, Photosynthesis

**Ans. (4)**

**Sol.** ATP produce in living organism at the time of oxidation of food. (Respiration) and also in plant during photosynthesis by the process of photophosphorylation.

**133.** Muscles contain special protein called \_\_\_\_\_  
(1) Contractile Proteins      (2) Vacuole Proteins      (3) Globular Protein      (4) Vesical Protein

**Ans. (1)**

**Sol.** The contractility is due to the presence of contractile protein (Actin & myosin) in the muscle fibre.

**134.** Which of the following groups have naked embryos  
(1) Bryophytes and Pteridophytes      (2) Bryophytes and Gymnosperms  
(3) Angiosperms and Pteridophytes      (4) Pteridophytes and Angiosperms

**Ans. (1)**

**Sol.** Bryophytes and pteridophytes have naked embryos which is known as spores.

**135.** Which of the following cellular component of blood contain haemoglobin  
(1) Red blood Cell      (2) White blood Cell      (3) Plasma      (4) Cytoplasm

**Ans. (1)**

**Sol.** RBC's are the red blood cells and its red colour is due to presence of Haemoglobin in it

**136.** Recessive characters will appear in  
(1)  $F_1$  generations      (2)  $F_2$  generations      (3) both  $F_1$  and  $F_2$       (4)  $F_3$  only

**Ans. (2)**

**Sol.** Recessive characters will appear in  $F_2$  generation by the selfing of  $F_1$  generation.

**137.** Which of the following statements is correct?  
(1) Prokaryotic cells have a well defined nucleus      (2) Eukaryotic cells have no Mitochondria  
(3) Prokaryotic cells have Mitochondria      (4) Eukaryotic cells have membrane bound organelles

**Ans. (4)**

**Sol.** Eukaryotic cells have well defined nucleus with membrane bound cell organelle.

**138.** Pineal gland is located  
(1) On the kidney      (2) In the Brain      (3) Near Thyroid      (4) In Pancreas

**Ans. (2)**

**Sol.** Pineal gland is present above the diencephalon which is the part of forebrain.

**139.** Which of the following is body's largest blood vessel?  
(1) Aorta      (2) Pulmonary Vein      (3) Capillaries      (4) Heart

**Ans. (1)**

**Sol.** Body's largest blood vessel is aorta which transport the blood from Heart to all the body parts.

**140.** Which of the following is not a raw material for photosynthesis?  
(1) Carbon dioxide      (2) Water      (3) Oxygen      (4) Chlorophyll

**Ans. (3)**

**Sol.** Plant make their food by the process of photosynthesis by using (sunlight, chlorophyll,  $H_2O$ ,  $CO_2$ ) raw materials. During light reaction, oxygen is liberated in photolysis as byproduct.

**141.** The pair of equations  $x=0$  and  $x = -3/4$  has.....  
(1) One Solution      (2) Two solutions  
(3) Infinitely many solutions      (4) No solution

**Ans. (4)**

**Sol.**  $x = 0$  and  $x = -3/4$  are parallel lines,  
So, no solution.

- 142.** If a point  $(a, b)$  is equidistant from points  $(x+y, y-x)$  and  $(x-y, x+y)$  then which of the following is true ?  
 (1)  $ay=bx$  (2)  $ax=by$  (3)  $a+b = x+y$  (4)  $a^2y=b^2x$

**Ans. (1)**

**Sol.** Let  $P(a, b)$ ,  $A(x+y, y-x)$ ,  $B(x-y, x+y)$

$$PA = PB$$

$$\Rightarrow PA^2 = PB^2$$

$$(x+y-a)^2 + (y-x-b)^2 = (x-y-a)^2 + (x+y-b)^2$$

$$(x+y-a)^2 - (x-y-a)^2 = (x+y-b)^2 - (y-x-b)^2$$

$$(2x-2a)(2y) = (2y-2b)(2x)$$

$$xy - ay = xy - bx$$

$$\Rightarrow ay = bx$$

- 143.** For going to a city B from city A, there is a route via city C such that  $AC \perp CB$ .  $AC=2x$  km and  $CB=2(x+7)$  km. It is proposed to construct a 26km highway which directly connects the two cities A and B. Find how much distance will be saved in reaching city-B from city A after the construction of the highway.

- (1) 5 km (2) 6 km (3) 8 km (4) 13 km

**Ans. (3)**

**Sol.**  $AB^2 = AC^2 + BC^2$

$$676 = 4x^2 + 4(x^2 + 14x + 49)$$

$$169 = 2x^2 + 14x + 49$$

$$x^2 + 7x - 60 = 0$$

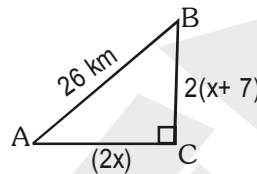
$$x = 5, -12 \text{ (rejected)}$$

$$x = 5$$

$$AC = 10\text{km}, BC = 24\text{km}$$

$$\text{Distance saved} = AC + BC - AB$$

$$= 24 + 10 - 26 = 8\text{km}$$



- 144.** In Quadrilateral ABCD,  $\angle B = 90^\circ$ , and  $\angle C - \angle D = 60^\circ$  and  $\angle A - \angle C - \angle D = 10^\circ$ . Find the measure of the smallest angle of this quadrilateral

- (1)  $35^\circ$  (2)  $25^\circ$  (3)  $50^\circ$  (4)  $55^\circ$

**Ans. (1)**

**Sol.**  $\angle B = 90^\circ$ ,  $\angle C - \angle D = 60^\circ$ ,  $\angle A - \angle C - \angle D = 10^\circ$

$$\angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$\angle A + \angle C + \angle D = 270^\circ \quad (\because \angle B = 90^\circ)$$

$$\angle A - \angle C - \angle D = 10^\circ$$

$$\Rightarrow 2\angle A = 280^\circ$$

$$\angle A = 140^\circ$$

$$\Rightarrow \angle C + \angle D = 130^\circ$$

$$\angle C - \angle D = 60^\circ$$

$$\Rightarrow 2\angle C = 190^\circ$$

$$\angle C = 95^\circ, \angle D = 35^\circ$$

Smallest angle  $\angle D = 35^\circ$

- 145.** Find a natural number whose square diminished by 84 is equal to thrice of 8 more than the given number

- (1) -3 (2) 12 (3) 6 (4) 9

**Ans. (2)**

**Sol.** Let the number be 'x'

$$x^2 - 84 = 3(x+8)$$

$$x^2 - 3x - 108 = 0$$

$$x = 12, -9$$

$$x = 12$$

**146.** Find the common difference of an AP whose first term is 1 and the sum of the first four terms is one third of the sum the next four terms.

(1) 2

(2) 4

(3) 1.5

(4) -2

**Ans. (1)**

**Sol.**  $a = 1, S_4 = \frac{1}{3}(S_8 - S_4)$

$$\Rightarrow 3S_4 + S_4 = S_8$$

$$\Rightarrow 4S_4 = S_8$$

$$4\left[\frac{4}{2}\{2(1)+3d\}\right] = \frac{8}{2}\{2(1)+7d\}$$

$$4 + 6d = 2 + 7d \quad \Rightarrow 2 = d$$

**147.** The mean weight of students of a particular class is 52kg. The mean weight of boys of this class is 56kg and that of girls is 50 kg. Find the ratio of number of boys to the number of girls in class

(1) 1 : 2

(2) 2 : 1

(3) 1 : 1

(4) 2 : 3

**Ans. (1)**

**Sol.** Number of boys =  $n_1, \bar{x}_1 = 56$

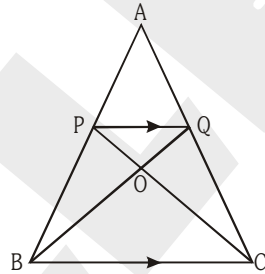
Number of girls =  $n_2, \bar{x}_2 = 50$

$$\bar{X} = \frac{n_1\bar{x}_1 + n_2\bar{x}_2}{n_1 + n_2}$$

$$52 = \frac{56n_1 + 50n_2}{n_1 + n_2} \Rightarrow 4n_1 = 2n_2$$

$$\frac{n_1}{n_2} = \frac{1}{2}$$

**148.** In figure PQ || BC, AP : PB = 4 : 3. Find the ratio of areas of  $\Delta BOC$  and  $\Delta POQ$



(1) 16 : 9

(2) 4 : 3

(3) 49 : 16

(4) 16 : 49

**Ans. (3)**

**Sol.**  $\frac{AP}{PB} = \frac{4}{3} \Rightarrow \frac{AP}{AB} = \frac{4}{7}$

$$\Delta APQ \sim \Delta ABC,$$

$$\text{So, } \frac{AP}{AB} = \frac{PQ}{BC} = \frac{4}{7}$$

Also,  $\Delta BOC \sim \Delta QOP$

$$\Rightarrow \frac{\text{ar}(\Delta BOC)}{\text{ar}(\Delta QOP)} = \left(\frac{BC}{PQ}\right)^2 = \left(\frac{7}{4}\right)^2 = 49 : 16$$



**149.** In  $\triangle ABC$ ,  $\angle C = 90^\circ$  and  $\tan A = 1$ . Find the value of  $2 \sin A \cos A$

- (1)  $\sqrt{2}$  (2)  $1/2$  (3) 1 (4)  $1/\sqrt{2}$

**Ans. (3)**

**Sol.**  $\tan A = 1 \Rightarrow A = 45^\circ$

$$2 \sin A \cos A = 2 \sin 45^\circ \cos 45^\circ$$

$$= 2 \left( \frac{1}{\sqrt{2}} \right) \left( \frac{1}{\sqrt{2}} \right) = 1$$

**150.** Consider the following statements when two straight lines intersect :

- i) Adjacent angles are complementary. ii) Adjacent angles are supplementary.  
iii) Vertically opposite angles are equal iv) Vertically opposite angles are supplementary.  
(1) (i) and (iii) are correct (2) (ii) and (iii) are correct  
(3) (i) and (iv) are correct (4) (ii) and (iv) are correct.

**Ans. (2)**

**Sol.** As we know, when two lines intersect, adjacent angles are supplementary and vertically opposite angles are equal. So, (ii) and (iii) both are correct.

**151.**  $3.\overline{27}$  is \_\_\_\_\_.

- (1) an integer (2) a rational number (3) a natural number (4) an irrational number

**Ans. (2)**

**Sol.** A rational number

**152.** The sum of all odd natural numbers between 0 to 40 is \_\_\_\_\_.

- (1) 1600 (2) 420 (3) 400 (4) 210

**Ans. (3)**

**Sol.** A.P is

$$1, 3, 5, \dots, 39$$

$$39 = 1 + (n - 1)2$$

$$n = 20$$

$$S_{20} = \frac{20}{2} [1 + 39] = 400$$

**153.** The empirical relation between mean, mode and median is \_\_\_\_\_.

- (1) mode = 3median - 2mean (2) mode = 2median - 3mean  
(3) median = 3mode - 2mean (4) mean = 3median - 2mode

**Ans. (1)**

**Sol.**  $3 \text{ Median} = \text{Mode} + 2 \text{ Mean}$

$$\text{Mode} = 3 \text{ Median} - 2 \text{ Mean}$$

**154.** If the perimeter of a circle is equal to that of square, then find the ratio of their areas

- (1) 14:9 (2) 13:11 (3) 13:9 (4) 14:11

**Ans. (4)**

**Sol.**  $2\pi r = 4a$

$$\frac{r}{a} = \frac{2}{\pi}$$

$$\frac{\text{Area of circle}}{\text{Area of square}} = \frac{\pi r^2}{a^2} = \pi \left( \frac{2}{\pi} \right)^2 = \frac{4}{\pi} = \frac{4}{22} \times 7 = \frac{14}{11}$$

**155.** Find the number whose square root is twice of its cube root.

- (1) 64 (2) 128 (3) 16 (4) 4

**Ans. (1)**

**Sol.** Let the number be x

$$\sqrt{x} = 2x^{1/3}$$

Raising power '6'

$$x^3 = 2^6 x^2 \Rightarrow x = 0, 64$$

$$x = 64$$

**156.** Fill in the blank

49, 343, 64, \_\_\_\_\_, 81, 729

- (1) 1024 (2) 512 (3) 778 (4) 182

**Ans. (2)**

**Sol.**  $7^2, 7^3, 8^2, \frac{8^3}{512}, 9^2, 9^3$

**157.** In an examination a student scores 4 marks for each correct answer and loses 1 mark for each wrong answer. If he attempts total 60 questions and secures 130 marks. Find the number of questions he attempted correct.

- (1) 35 (2) 40 (3) 38 (4) 42

**Ans. (2)**

**Sol.** Let the number of correctly answered questions be 'x'

Let the number of incorrectly answered questions be 'y'

$$x + y = 60$$

$$4x - y = 130$$

Solving,  $x = 38, y = 22$

**158.** A number consists of two digits. The sum of both digits is 11. If 27 added to the number then digits inter change their places. Find the number.

- (1) 47 (2) 65 (3) 83 (4) 92

**Ans. (1)**

**Sol.** Let the number be  $10x + y$

$$x + y = 11$$

$$10x + y + 27 = 10y + x$$

$$9(y - x) = 27$$

$$y - x = 3$$

Solving,  $x = 4, y = 7$

Number = 47

**159.** If  $\sqrt{2048} = \sqrt{2^x}$ ,  $\sqrt{2187} = \sqrt{3^y}$  and  $\sqrt{3125} = \sqrt{5^z}$  then the value of  $x + y - z =$

- (1) 1 (2) 9 (3) 13 (4) 23

**Ans. (3)**

**Sol.**  $\sqrt{2048} = \sqrt{2^x}, \sqrt{2187} = \sqrt{3^y}, \sqrt{3125} = \sqrt{5^z}$

$$2^x = 2^{11}, 3^y = 3^7, 5^z = 5^5$$

$$x = 11, y = 7, z = 5$$

$$x + y - z = 13$$

**160.** Find the value of y in terms of x  $\frac{3x + 4y - 3}{7} = \frac{-3x + 4y - 7}{9}$

(1)  $\frac{-24x - 11}{4}$

(2)  $\frac{-11x - 24}{4}$

(3)  $\frac{-4x - 11}{24}$

(4)  $\frac{-24x - 4}{11}$

**Ans. (1)**

**Sol.**  $\frac{3x + 4y - 3}{7} = \frac{-3x + 4y - 7}{9}$

$$27x + 36y - 27 = -21x + 28y - 49$$

$$8y = -48x - 22$$

$$y = \frac{-24x - 11}{4}$$

**161.** Who was the first Viceroy of India ?

(1) Robert Clive

(2) Lord William Bentinck

(3) Warren Hastings

(4) Charles John Canning

**Ans. (4)**

**162.** By which name was Punjab known in Ramayan and Mahabharat?

(1) Panchnad

(2) Sapat Sindhu

(3) Panta Potamia

(4) Lahore Suba

**Ans. (1)**

**163.** In which year was Guru Teg Bahadur Ji Born?

(1) 1605

(2) 1628

(3) 1656

(4) 1621

**Ans. (4)**

**164.** To whom did Guru Har Rai Ji sent Delhi when he was called by Mughal Emperor Aurangzeb?

(1) Prithvi Chand

(2) Ram Rai

(3) Dhirmal

(4) Harkrishan ji

**Ans. (2)**

**165.** Who is credited for demanding Swaraj from the Congress platform for the first time

(1) Surinder Nath Banerjee

(2) Gopal Krishan Gokhale

(3) Dadabhai Naroji

(4) V.D Savarkar

**Ans. (3)**

**166.** Which Guru Sahib started the Manji System?

(1) Guru Amardas ji

(2) Guru Angad Devi

(3) Guru Ram Das ji

(4) Guru Arjun Dev Ji

**Ans. (1)**

**167.** Which of the following cities was the capital during Banda Singh Bahadur's Rule ?

(1) Khanna

(2) Sirhind

(3) Lohgarh

(4) Kethal

**Ans. (3)**

**168.** When was the 'Gadar Party' formed?

(1) 1914

(2) 1913

(3) 1920

(4) 1929

**Ans. (2)**

**169.** During the middle of 19th Century Italy was divided into how many states and which one was ruled by the Italian Princely house

(1) 7, Sardinia-Piedmont

(2) 6, Sardinia- Piedmont

(3) 5, Florence

(4) 6, Habsburg

**Ans. (1)**

**170.** In France the female allegory was named as

(1) Germania

(2) Maria

(3) Alice

(4) Marianne

**Ans. (4)**

**171.** A liberal colonial officer who formulated new rules to restore the freedom of the Press in India was-

(1) Warren Hastings

(2) Thomas Macaulay

(3) William Bentick

(4) Robert Clive.

**Ans. (2)**

**172.** Which one of the following countries is not a member of South Asian Association for Regional Co-operation (SAARC)

- (1) Bhutan                      (2) India                      (3) Nepal                      (4) China

**Ans. (4)**

**173.** By what name the coastal plains from Daman to Goa are known as ?

- (1) Malabar Coast              (2) Konkan Coastal plains      (3) Eastern Coastal plains      (4) Northern coastal plains

**Ans. (2)**

**174.** Which one of the following districts is the smallest in area?

- (1) Ludhiana                      (2) Bathinda                      (3) Gurdaspur                      (4) Pathankot

**Ans. (4)**

**175.** Which one of the following regions normally experience the convectional type of rainfall ?

- (1) Equatorial region              (2) South Polar Region              (3) North Polar Region              (4) Glaciated region

**Ans. (1)**

**176.** Ravi, Jhelum and Chenab are distributaries of which river

- (1) Godavari                      (2) Ganga                      (3) Yamuna                      (4) Sindhu

**Ans. (Bonus) it should be tributaries (then the answer will be 4)**

**177.** Which of the following agents causes the formation of V-shaped valley?

- (1) Snow                      (2) Wind                      (3) River                      (4) Sea Waves

**Ans. (3)**

**178.** Which type of soil is extensively found in Punjab?

- (1) Black Soil                      (2) Alluvial soil                      (3) Red Soil                      (4) Laterite soil

**Ans. (2)**

**179.** Which is the first express way of India?

- (1) Delhi-Calcutta              (2) Mumbai-Pune              (3) Bengluru-Chennai              (4) Delhi Mumbai

**Ans. (2)**

**180.** The food needs of any country are determined by?

- (1) The size of population and its standard of living      (2) The geographical size of area  
(3) The urbanized population                      (4) The rural population

**Ans. (1)**

**181.** Tropic of Cancer passes through \_\_\_\_\_ state

- (1) Bihar                      (2) Uttar Pradesh                      (3) Mizoram                      (4) Nagaland

**Ans. (3)**

**182.** The area with more concentration of Jute mills in India are of

- (1) Maharashtra                      (2) Gujrat                      (3) West Bengal                      (4) Uttar Pradesh

**Ans. (3)**

**183.** Which of the following countries does not have veto power?

- (1) France                      (2) India                      (3) China                      (4) Russia

**Ans. (2)**

**184.** The principle of 'Judicial Review' has been taken from which country ?

- (1) United State of America                      (2) Germany  
(3) France                      (4) England

**Ans. (1)**

**185.** How many members are taken for the Lok Sabha & Rajya Sabha from Punjab ?

- (1) Lok Sabha-11 Rajya Sabha-9                      (2) Lok Sabha-13 Rajya Sabha-7  
(3) Lok Sabha-9 Rajya Sabha-7                      (4) Lok Sabha-12 Rajya Sabha-2

**Ans. (2)**

- 186.** Who is included in the 'electoral college' or electorate for the election of our President  
(1) All the members of Lok Sabha  
(2) All the members of Rajya Sabha  
(3) Elected members of Lok Sabha, Rajya Sabha and elected members from State Legislative Assemblies and elected members from Union Territories.  
(4) All members of Lok Sabha, Rajya Sabha and State Legislative Assemblies.

**Ans. (3)**

- 187.** Peaceful 'Co-existence' is the part of which agreement?  
(1) Panchsheel (2) Simla Agreement  
(3) Tashkand Agreement (4) Nehru Layakat Agreement

**Ans. (1)**

- 188.** India opposes strongly at International level for which issue ?  
(1) United Nations (2) Foreign Companies  
(3) Common Wealth Nations (4) Terrorism in all forms.

**Ans. (4)**

- 189.** Which rights are not given to foreigners ?  
(1) Political Rights (2) Economic Rights (3) Social Rights (4) Economic Rights

**Ans. (1)**

- 190.** The Chief Minister Generally belongs to  
(1) Rajya Sabha (2) Lok Sabha  
(3) State Legislative Assembly (4) State Legislative Council

**Ans. (3)**

- 191.** Right to 'Free and Compulsory Education' was implemented in all over India on  
(1) March 2009 (2) April 2010 (3) January 2002 (4) February 2014

**Ans. (2)**

- 192.** Which among the following is not a key feature of Parliamentary form of Government?  
(1) Close relationship between Legislature and Executive  
(2) The Power of Judicial Review by Judiciary Courts  
(3) Real and Nominal Executive  
(4) Responsibility of Executive towards Legislature.

**Ans. (2)**

- 193.** The extra ordinary increase in agriculture especially in the production of wheat and rice is called.  
(1) Revolution (2) Paddy Revolution (3) Green Revolution (4) White Revolution

**Ans. (3)**

- 194.** The reward given to the entrepreneur for his factor services is called:  
(1) Interest (2) Rent (3) Wages (4) Profit

**Ans. (4)**

- 195.** When more than required labourers are employed in any occupation , then these extra labourers is called which type of unemployed?  
(1) Seasonal Unemployed (2) Distinguished Unemployed  
(3) Industrial Unemployed (4) Under Unemployed

**Ans. (4)**

- 196.** The Government policy related to its revenue and expenditure is called:  
(1) Monetary Policy (2) Fiscal Policy (3) Price Policy (4) Industrial Policy

**Ans. (2)**

**197.** When was the New Industrial Policy launched in India?

- (1) 1948                      (2) 1956                      (3) 1991                      (4) 2001

**Ans. (3)**

**198.** In India \_\_\_\_\_ percent of people are living below poverty line,

- (1) 21.9                      (2) 22.9                      (3) 23.9                      (4) 24.9

**Ans. (1)**

**199.** Under MNREGA Scheme of the Government how many days of employment. It is provided to the labourers in India ?

- (1) 100                      (2) 120                      (3) 150                      (4) 200

**Ans. (1)**

**200.** Banking Services are included in which of the following sectors of the economy ?

- (1) Primary Sector              (2) Secondary Sector              (3) Service Sector              (4) Industrial Sector

**Ans. (3)**

